January 4, 1920.

Hon. William Kettner,
The Office Building,
House of Representatives,
Washington, D. C.

My dear Bill:

This is to call your attention to the matter of Captain Dahl of San Pedro, whom, you remember, I mentioned to you as an applicant for Inspector of local hulls and boilers.

Also I want to call your attention to the Kelp Experiment Plant at Summerland, and hope that you will do all that you can to keep this experiment going. As I told you, while you were here, this experiment is actually costing the Government nothing as there is an much income as outgo. However, the actual operating expenses must be paid for through an appropriation bill, and then the income is turned back into the Treasury.

With best wishes to you during this last term of office, I am

Very sincerely yours,

VCC/G

January 6, 1920.

Hon. William Kettner,
The Office Building,
House of Representatives,
Washington, D.C.

My dear Bill:

This is to call your attention to the matter of Captain Noel of San Pedro, who, you remember, I mentioned to you as an applicant for Inspector of local Mills and Lights.

Also I want to call your attention to the Kelp Experiment Plant at Summerland, and have that you will do all that you can to keep this experiment going. As I told you, while you were here, this experiment is actually costing the Government nothing as there is so much income as extra. However, the actual operating expenses must be paid for through an appropriation bill, and then the income is turned back into the Treasury.

I am

Very sincerely yours,

rcc/m

Itinerary and results of same

Feb. 1. 2. and 3. — 1920

Left Station at 7. a. m. on first, driving up coast through Santa Ana. Stopped three miles this side of Tustin and picked up a man hurt in automobile accident and took him to sanitarium in Santa Ana. Then drove to Alamitos Bay, Long Beach and looked at the concrete piling of the pier. Found only a limited number of cracks present which were small in area and several spots of brown and reddish rust showing in a fair percentage of the piling. These pilings are octagonal in shape and appear to be in very excellent condition, in fact, the entire pier is in excellent condition. It differs from our pier in that instead of having iron truss rods, it has wooden truss rods under the wooden stringers and these stringers hold a wooden floor on which is placed an asphalt covering.

Drove from here to Long Beach where Mr. Lyle and Mr. Dunn who accompanied me, were dropped for the time being to investigate the bath house and breakwater at that point, while Mr. Barnhart and myself continued on to San Pedro. At San Pedro Mr. Barnhart made collections along the coast of Point Fermin, while I made the usual monthly examination of kelp along the breakwater. We then drove to San Pedro proper where I left Mr. Barnhart and I went to see John Dahl, the Hull and Boiler inspector, Southern California District, concerning sailing conditions along the coast of Southern California.

Dahl figures that it will take from 55 to 60 days to beat up the coast from Panama to San Diego, it being necessary on account of the northwest wind to take a leg which will extend over nearly to the Hawaiian Islands, and after getting enough lee way then to come in on a tack probably from opposite San Francisco in to San Diego, coming in on the northwest winds. In this there is a belt of about 300 miles lying

Itinterary

between the northeast and northwest winds, namely the Doldrum Belt, which would have to be steamed through. The main problems to be considered would be the matter of water, in which case the boat's supply of water should not be mixed with the rain water which might be caught in rain storms which occur usually at night, as putting the rain water with the regular water would cause the regular water to go bad.

However, should it be decided not to sail up the coast but steam up, the particular point to be looked out for is the coast of the Gulf of Tehuantepec. In crossing this Gulf follow the shore not more than 2 miles off shore and be sure and do not take course from point to point on account of heavy seas that would be met, and also look out for the shoals south of Tehuantepec, as these shoals extend out about 7 miles from shore line.

At Acapulco no supplies can possibly be obtained, but oil should be gotten at Panama, at La Union, where arrangements should be made with the W. R. Greyson Co. of San Francisco, at Corinto, at Point Arenas and at Manzanillo.

The run from Jacksonville, Florida, ~~xk~~ to Panama should not take to exceed 5 or 6 days and the principal point to be looked out for is Colon where the approach is deceptive and one must get a great deal farther in shore than would apparently appear to be so from a seaward approach. At Colon a pilot would be taken on and this pilot will take the boat through the Canal, but an additional pilot would be taken on to take the boat through each of the locks, and the pilot will remain until sea is reached on the Pacific side. The Captain was unable to give me pilot rates.

At this point I picked up Mr. Lyle and Mr. Dunn and we drove to Redondo and there examined the Redondo bath house, interviewing Mr.

Summers, the manager. Also investigated the Redondo pier. In this case found that the action was entirely due to erosion and undercutting of the piling and that this action caused the outer end of the pier to drop in, making the pier unsafe. From Redondo we drove to Hollywood, where we took on oil and gas and then drove up to Owensmouth; from Owensmouth to the Santa Susana grade; over the Santa Susana grade to Camarillo and to Oxnard, it raining from the time we passed Santa Susana until we reached Oxnard, which point we reached about 11 p.m.

Next morning, the 2nd.

I left at 7 a.m. for Hueneme where I met Mr. Garner, who is the collector for the Institution, and I gave him instructions for biological collections which are to be made for Mr. Allen. Going back through Oxnard, I again picked up Mr. Lyle and Mr. Dunn and drove to Ventura where we looked at the bath house and then we drove on to Summerland where I interviewed Dr. Torrentine and viewed the kelp beds along the coast. From that point up to Santa Barbara, where we interviewed Mr. Holt of the Santa Barbara Press concerning the proposed breakwater which is to be built at Santa Barbara. Left Santa Barbara about 2 p.m. and drove back through Los Angeles to Santa Monica arriving there 10 p.m.

On the morning of the 3d left Santa Monica at 7 a. m., first going to the concrete pier and examining the piling. The piling here was circular in shape and practically all of it has begun to disintegrate. This disintegration is caused by the poor mix of sand, gravel and cement, sand having been used from the sea shore and thus allowing the air to get in the reinforcing iron and this air caused the reinforcing iron to rust and as it rusted it expanded and this

expansion caused the concrete to break and so it has broken away from the piling to below the depth of the reinforcing iron, leaving an improperly supported wharf. Divers have gone down along the pier and they find that this disintegration is taking place clear down to the bottom and that in some cases the piles have broken off so much so in fact, that in one place on the pier a crowd caused the pier to settle about 10 inches, and this settling caused Santa Monica to declare the pier unsafe, and it is now not open for public use. They now propose to cut out holes in the deck of the pier and place wooden pilings under the caps at a cost of approximately $75,000. Very evidently the whole pier will fall in in a comparatively short time if something of the kind is not done.

This pier was built about 10 years ago and repairs were begun on it about 5 years ago. At first they attempted to put iron cases about the piling and fill these with concrete, but on account of the great force asserted by the expansion caused by the rust taking place in the reinforcing iron, these skirts were unable to hold back the thrust power and they also have cracked as well as the piling above these. These skirts extend up to the high water line only.

From this point drove to Los Angeles and picked up Mr. Barnhart and telephoned Ledbetter Company but was unable to get in touch with either Mr. Ledbetter or Mr. Wright. We then drove to San Pedro where the Food Administration certificates were left for all members of my corps, who were appointed either out of the Fish and Game Commission or out of the National Canners Association office.

We then viewed the kelp on Point Fermin and then drove to Huntington Beach, where I examined the pier which was built in 1914. This pier also has circular piling and nearly all of the piling are showing the effects of disintegration, although pieces have not yet begun

to drop out, however, it is very apparent that the pier is doomed to a short life unless something can be done to over-come this disintegrating effect of the rusting of the reinforcing iron. Nearly all of the p iling was affected and some of the cracks had opened out to a distance of 1/2 inch.

As a result of the investigation, the length of life of our pier would tend to show that the cracks on our pier are those which were caused by the beginning of rust on the reinforcing iron and that we may anticipate that it will not be long before this action will begin to cause very evident disintegration on the piling. Unless we are able to find some method of pointing the piles which will stop this disintegration, the life of the pier will be limited probably to another 5 years and at that time we might anticipate that we would have to declare it unsafe.

From this point drove back to La Jolla arriving at 6. p.m.

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From this point drove back to La Jolla arriving at 6. p.m.

La Jolla, California,
February 4, 1920.

Chief Bureau of Soils,
Washington, D. C.

Dear Sir:

During the last three days I have made an investigation of the kelp beds along the coast of Southern California. Left La Jolla on the morning of February 1st and returned the evening of Tuesday, February 3d. I find the kelp beds to be as follows:

Beds 1, 2, and 3 Medium.
Bed 4 has died out along the north portion, while the southern portion appears to be medium in thickness.
Beds 5, 6, 7, and 8 are medium.
Beds 9 heavy
Bed 10 heavy
Beds 11, 12, 13 and 14 heavy.
Bed 18 thin.
Bed 19 thin.
Beds 20, 21 and 22 heavy.
Bed 23 thin.

I also visited Dr. Turrentine and received from him certain data that I desired to use in continuing the work on growth when considered with cutting. At the present time the Government is the only agent which is consistently cutting kelp and so our future information must be taken from a study of beds no. 20, 21 and 22.

I was unable to get any further information while on the trip concerning the company which is being promoted by Mr. Tanner. Whether or not he is continuing, I am unable to say.

The growth experiments which I am carrying on on the breakwater of San Pedro, show that some of the plants grew about four feet during the month of January.

Dr. Brandt, who was employed by the Scripps Institution until July 1, 1919, died during the month of December, and at

present time I am completing the editing of his paper, which will be forwarded to you within a few days in the hopes that you may find it possible to print the same.

Very sincerely yours,

WCC/G

Collaborator.

1852 - 18 - 19 - 37

Feb.9th 1920.

Chief, Bureau of Soils,

Washington D.C.

Dear sir:

Under separate cover I am forwarding to you the manuscript of the paper that was prepared by Dr.R.P.Brandt on the Growth and Developement of Macrocystis pyrifera. This paper was prepared under my direction during the years 1917-18-19. It was only after long search, that I was able to find a man capable of carrying on these investigations and I feel that I was particularly fortunate in finding Dr.Brandt.

Unfortunately the paper was never put into final shape by Dr.Brandt and the rough draft has ~~been~~ finally been made available only through the aid and assistance of my wife. The author Dr.R.P.Brandt died on Dec.3rd 1919 of pneumonia and the redrafted paper will have to be handled without his good criticism. Dr.Brandt was born July 29th 1882 and spent a great portion of his life along the frontier of Mendocino County, California where he early became acquainted with the kelps along the California Coast. He received his professional training at Occidental College and the Univ. of California. His place of early life, his natural abilities and his persevering habits fitted him to the work as it was accomplished here most admirably as he was patient, painstaking abd conscientious.

Will you kindly send the proof to me at La Jolla for correction? I am leaving this week for a cruise on the yacht "Kemah" from Jacksonville, Fla. to San Diego via the Panama Canal and I hope to be able to check up the work on the kelp from Lower California to San Diego.

Very truly yours

O.C. Crandall

C

THE SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH
OF THE
UNIVERSITY OF CALIFORNIA

LOCATED AT LA JOLLA
NEAR
SAN DIEGO, CALIFORNIA

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Very truly yours

W. C. Crandall
Collaborator

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OF THE
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LOCATED AT LA JOLLA
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Chief,Bureau of Soils,
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Dear Sir:

Under separate cover I am forwarding to you the manuscript of the paper that was prepared by Dr. R.P.Brandt on the growth and development of Macrocystis pyrifera, and the methods and effects of harvesting it. The paper was prepared under my direction,or rather the work for it, during the years 1917-18-19. It was only after long search that I found a man capable of making these investigations, and I feel that I was particularly fortunate in being able to get Mr. Brandt.

Unfortunately the paper was never put into final shape by Dr. Brandt before he left the Station. The rough draft was edited by my wife, but without Dr. Brandt's good criticism as he died suddenly from pneumonia on Dec.3,1919. Dr. Brandt was born July 29,1882. He spent a great portion of his life along the frontier of Mendocino County, California, where he early became acquainted with the kelps and other plant life along the coast. He received his professional training at Occidental College, and the Univ. of California, and later assisted at the Univ. of Calif. in the Botany Department. His home surroundings, his natural ability, and his persevering habits fitted him most admirably for such work as he did here. In his investigations he was patient, painstaking and conscientious.

Will you kindly send the proof of his paper to me at La Jolla for correction? I am leaving this week for a cruise on the yacht "Kemah" from Jacksonville, Fla. to San Diego via the Panama Canal, and shall check up the work on kelp along the way.

Very truly yours
W. C. Crandall, Collaborator

Feb.9,1920.

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Mexico
La Jolla

April 19, 1920.

Chief, Bureau of Soils,
Washington, D. C.

My dear Sir:

Last February I had the pleasure of calling upon you in your office and telling you that I was on my way for a trip through the Panama Canal and up along the western coast to San Diego, and that I hoped to have an opportunity of looking over the kelp beds along the coast of Lower California. I have now completed that trip and am able to make the following report:

No kelp was found from Cape St. Lucas to Magdalena Bay, and from Magdalena Bay to Turtle Bay evidences of former beds were found at the entrances of two or three small spits but nothing worth any consideration at this time. Between the Natividad Island and the main land straggling clumps of kelp were found. On the west coast of Cedros Island a small amount of kelp was seen but no headed beds as previously reported. Striking across from Cedros Island to Canoas Point and thence along the coast, thin outlines of beds were seen from Canoas point to San Quintin. However, no heavy beds were seen in this location. As we came along the coast to Geronimo Island we found that the outlines of beds were apparently but with the exception of one comparatively small bed, all of the former heavy beds are at this time very thin. In going between the main land and Geronimo Island in 1908 it was difficult to navigate on account of the quantity and thickness of this beds in that neighborhood, but in this trip we were able to go in any direction without interference because of kelp getting in the wheels. This confirms the reports which I have had during the last eighteen months of the condition of the kelp in that region. Coming up along the coast line past Todos Santos we found some beds which were moderate in thinkness about Todos Santos, otherwise the kelp is extremely thin.

I was particularly anxious to view these beds personally as they had not been touched by harvesters at any time, and are in their original condition, so that this shows us that beds which we have known to be heavy in the past are thin at the present time. I will keep in touch with conditions in the south to find out whether or not heavy beds reappear and the length of time which exists between the passing of heavy beds of one time until the reestablishment in the future. The beds off La Jolla and Point Loma are in moderate condition

but so far the La Jolla bed has not reestablished itself as well as it was when these reports were first made or during the period when kelp was being cut extensively off the point.

Next month I hope to complete this survey by making a trip as far north as Point Conception so that I may then give you a full comparison of the growth of kelp from Lower California to Point Conception. I now have at times at my disposal the yacht "Komah" which I hope to be able to use in making this tour.

Trusting that this will give you a bird's eye view of the kelp situation so far as I have seen it in the last two months, I am

Very sincerely yours,

WCC/G

Collaborator.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

✓ CCF-PMR

INVESTIGATION OF FERTILIZER RESOURCES.

April 28, 1920.

Prof. W. C. Crandall
The Scripps Institution for Biological Research,
University of California,
La Jolla, California.

Dear Sir:-

Your letter of April 19 has been received.

The data you secured is very interesting and I will be glad to hear from you again when you complete your survey.

Very truly yours,

Milton Whitney

Chief of Bureau.

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CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

✓CCF-PMR

INVESTIGATION OF FERTILIZER RESOURCES.

May 12, 1920.

Prof. W. C. Crandall,
Scripps Biological Institute,
La Jolla, California.

Dear Prof. Crandall:-

I am attaching a copy of an article which appeared in the May 8 issue of Rock Products. We are interested in this project and will be pleased to have you give us any information you have or can easily find out regarding it.

Very truly yours,

Milton J. Dunlavy

Chief of Bureau.

Inclosure.

USE AMERICAN POTASH

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

May 18, 1920.

Capt. W. C. Crandall,
Scripps Biological Institution,
La Jolla, California.

Dear Crandall:

I have your good letter of the 11th instant, and in reply wish to say that I have secured a colorimeter from Burd at Berkeley, so our temporary needs in that regard are satisfied. I thank you for your kind efforts in our behalf in that connection.

I suppose Prof. Ritter spoke to you about the status of your manuscript, and in that connection wish to say that I am holding it here until I can see you. If you are coming up this way soon, I will wait for that opportunity, otherwise I shall try to arrange a trip down although I don't see how I can get away before the first of July. I hope you will have the opportunity to come up here before then. I want to hear all about that cruise.

With kindest personal regards,

Yours very sincerely,

J W Turrentine

In Charge.

JWT:ELB

Kelp Condition
May 27, 1920

May 27, 1920.

Chief, Bureau of Soils,
Washington, D. C.

My dear Mr. Whitney:

Your letter of May 12th is at hand. As soon as possible after receiving the same, I made a trip which included seeing about the Potash Manufacturing Plant to be located at Monolith and leased by Mr. Fred A. Ballin; interviewed Dr. Turrentine at Summerland concerning the printing of the paper by Dr. Robert P. Brandt by some of the state authorities; and investigated the kelp beds from San Diego to Santa Barbara.

1. Concerning the Potash Manufacturing Plant located at Monolith: This company is known as the United States Potash Company, and is a partnership consisting of Fred A. Ballin, president and financial backer of the same; Aman Moore, Vice president and general manager, a man who has spent most of his life in building and operating cement plants; and Coy Burnett, secretary and treasurer. The plant is to be located at Monolith, California, a place about twelve miles from Tahachapi in Kern County, while the general office is at 609 Hibernian Building, Los Angeles, California.

The Los Angeles Public Service Commissioner cement plant at Monolith has a capacity of 1200 barrels of cement per day, with a possible out-put of 1500 barrels per day. The plant is located about three miles from the quarry, the quarry being made up of calspar. The analysis of this is as follows:

Smith and Emery Report
#8539 #1

Silica (SiO_2)	2.80
Iron Oxide (Fe_2O_3)	.16
Alumina Al_2O_3	.84
Lime (CaO)	53.54
Magnessia (MgO)	.57
Losson Ignition	42.00
	99.91

Smith and Emery Report
#8546 #1
Dry Analysis

Silica (SiO_2)	51.93
Iron Oxide (Fe_2O_3)	7.15
Alumina (Al_2O_3)	15.30
Lime (CaO)	6.31
Magnessia (MgO)	5.00
Alkalin	4.17
Sulphic Anhydik	.14
Chlorine	.83
Losson Ignition	9.91
	100.74
Minus C for C1	.19
	100.55

#2

The calspar contains about 8 to 8 1/2% K^{2O}. At the same time there is within three hundred miles of the plant a new site of leutice so that it is a question in the minds of those operating, or who intend to operate, whether they had better use the lower grade material which is right at hand, or pay the freight and use the higher grade material. From their investigations it seems to the interested men that the two propositions are practically a stand-off. Mr. Moore tells me that they control the Oliver & Sterling patents and that they have been doing work for about three years in connection with the getting of potash out of the rocks; that their experimental work has been done with the Bureau of Mines Department which is located at Salt Lake City, so that I think you can get the information you desire from that Bureau. The work as described to me by Mr. Moore was that their experiments had been on a laboratory and a commercial basis; that their process which they anticipate using differs in that they heated the material in the kilns, by dropping it while it is still hot in water and thus preventing reabsorbing of the K^{2O} by the slag as it passes on out through the kiln, as he claims that from 3 to 4% of the volatile K^{2O} was reabsorbed into the slag when put through the Sterling process, but that by dropping this material while it is next to the petrifying stage in the water that they will be able to recover about 80%. The former action he attributed to the forming of spheres of temperature or upon the zones of temperature in the kiln whereby one portion would have the material at a much higher temperature than another portion, thus permitting the reabsorbtion of the volatile gases as they passed along the kiln.

I noted, however, that Mr. More is going East to make a study at the present time of gas and gas furnaces before he commences the installation of his potash machinery, and that at the present time he anticipates that it will be eight months before they can be ready to undertake that portion of their work, while the lease which they hold is for only five years. However, they are going to proceed, so he tells me, at once, to make cement and then finally probably use two of the kilns for the potash production and leave one of the kilns for cement production so that I think their processes are still very doubtful, and it is very questionable whether they will succeed any better than some of the other potash concerns which have treated rock have succeeded. Mr. Moore is a practical cement man and had had a limited amount of chemical training. However, at the present time it is a partnership affair and so it is more probable that they will try to make a paying proposition of this company than if it were a stock company, and that if they can't make a go of the potash end, they will make a go of the

cement end.

The reason for the locating of the United States Potash Company in Monolith is that the plant is already installed and ready for use, while the company was unable to get the plant any place else which was ready for rapid production. The only other plant was the one in Utah and that is involved in so many financial difficulties that it was impossible for them to use the plant although the material available would suit their purpose much better.

The possible sources of supply to which Mr. Moore is looking, would be the tailings of some of the mines in Utah and Colorado of some of the leutice mines, and some of the calspar mines or quarries in California, and he believes that it would be as possible to produce potash as it is now possible to produce cement. However, he does state that the price of potash will have to be from $2.50 to $3 per unit in order to make this a profitable business.

2. I interviewed Dr. Turrentine concerning Dr. Brandt's paper and I have agreed to take the matter up with the Press of the University of California and see if we can not get them to print the same, and at the same time print the paper which I have under way taking up the history and development of a kelp industry, the phase which has not been touched upon by either Dr. Turrentine or Dr. Brandt. I think there is no doubt about my being able to do this, but the Press at the University is very much crowded so that probably the paper would not come off the press for some eighteen months or two years.

3. The kelp beds along the coast show up as follows:

Tijuana No. 1 thin
San Diego Bay no.2 medium
Point Loma No. 3 heavy
La Jolla No.4 medium
Del Mar No. 5 thin
Encinitas No. 6 thin.
Oceanside No. 7 thin.
Matoo No. 8 medium
San Juan No. 9 medium.
San Pedro No. 10 medium.
Point Fermin No. 12 heavy
Whites Point No. 13 heavy

#4

Redondo No. 41 heavy
Ventura No. 18 thin
Gorda No. 19 medium
Carpinteria No. 20 heavy but narrow
Summerland No. 21 heavy - narrow
Santa Barbara No. 22 heavy.

Also I can report that there is nothing but straggling bunches of kelp all about Natividad and Cedros off the coast of Lower California. This will complete the observations which were made by Captain Morse and myself on our trip up the coast, and this particular portion Captain Morse was able to look over for me on a recent visit to Cedros and Natividad Islands.

Very sincerely yours

WDC/G

Collaborator

FRED A. BALLIN
PRESIDENT

AMAN MOORE
VICE-PRES. AND GEN. MANAGER

COY BURNETT
SECRETARY AND TREASURER

UNITED STATES POTASH COMPANY

MANUFACTURERS MINERAL PRODUCTS

PLANT
MONOLITH, CAL.

GENERAL OFFICES
609 HIBERNIAN BLDG.
LOS ANGELES, CAL.

8½ K_2O Calspar – 3 miles of plant
12 Sulphate 300 miles of plant

Heat – drop hot material in water – recover

88% –

Work done under Bureau Mines at
Salt Lake City – 3 yrs. investigation
2nd – 3rd mint for prospt. Table burning.
Olsen & Stirling Patents.
8 mos. for at mining
~~Blas~~ Blast furnaces to be investigated
Lay reactants 3½% in rotary kiln.

Oliver
Stirling Pollock

La Jolla, Calif.,

June 30th 1920.

Chief, Bureau of Soils

Washington, D.C.

Dear sir:

Enclosed is a clipping that is self explanatory. These men are all well known to me except Mr. Knoll. Mr. Lookwood is the leading man and he has had considerable experience as a city manager and as an engineer. There is no one in the group so far mentioned that is a qualified chemical engineer so fat as I know. This matter has been brewing for some time and has only recentl come to a head. The final plans are not well in hand and as soon as anything definite ca be learned the president has promised to notify me. I have advised the president and a couple of the others to go to Santa Barbara and have a good talk with Mr. Turrentine and also get from him his advice as to the opportunity that is opening and see whether they should go ahead at this time. The men are all stable men and I believe will listen to what is told them.

Tomorrow I leave for a short boat trip and hope to be able to report on some of the kelp beds that are off shore. However the entire survey of the beds will be made during this month.

Kelp beds off Cedros Island are now reported as showing somewhat and apparently the beds are beginning to start towards normal growth aga at least in the southern portions.

Very truly yours

J. C. Cantacc

USE AMERICAN POTASH

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

July 1, 1920.

Capt. W. C. Crandall,
Scripps Biological Institution,
La Jolla, California.

Dear Captain:

Enclosed herewith is a letter together with newspaper clipping, which are self-explanatory. You will note that they propose to come up here for information and I have got to decide whether they are another stock-jobbing outfit or really mean business. Can you give me a line on any of them? and also your opinion as to whether they should have our support or not?

Thanking you for an early reply, and with best wishes,

Yours very sincerely,

J. W. Turrentine
In Charge.

JWT:ELB

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP
SUNNYVALE, CALIFORNIA.

July 1, 1920.

Dr. C. C. Crandall,
Marine Biological Institution,
La Jolla, California.

Dear Sir:

Enclosed herewith is a letter together with newspaper clipping, which are self-explanatory. You will note that they propose to come up here for information and I have decided to decide whether they are another stock-jobbing outfit or really worth business. Can you give me a line on them or know and also your opinion as to whether they should have our support or not?

Thanking you for an early reply, and with best wishes,

Yours very sincerely,

H. M. Summers,
Director.

J.T.Ch.

San Diego. Cal. 6-27-1920.

Dr. J. W. Torrentine
Summerland. Cal.

Dear Sir:

Am enclosing clipping regarding organization of the National Kelp Products Co.

We think we have a good board of directors, one that will work hard for success.

With your permission some of the directors will probably pay you a visit in the near future, as they wish to familiarize themselves with the process of reduction of kelp.

Will keep you posted from time to time of the progress of the company.

Yours very truly

J. M. Lockwood
1752-23 St.

Please return this
JWT

July 6th 1920.

Chief, Bureau of Soils,

Washington D.C.

Dear sir:

Last Saturday I was at Santa Cruz island and there found an interesting scientific fact in that I found two mature and two young kelp plants (Macrocystis pyrifera) upon the roks between low water and high water marks. The plants were entirely out of the water when I found them and would probably not be under water more than one half to two thirds of the time. These are the first specimens that I have found under these entirely natural conditions. The plants that I have been studying at San Pedro breakwater were also within these limits as I have before noted but these are the first where rocks were in this position and in their natural condition.

Beds as a whole are in excellent condition from San Diego to Redondo altho most of them can only be termed as heavy.

Report from below Cedros Island is that some of those beds are now beginning to show in better thon shape than a month ago.

Very truly yours

Collaborator.

July 6th 1920.

My dear Turnetine:

Today I had a conference with Bert McLees and F.M.Lockwood. The proposition that they have in mind is to sell stock and have funds for same placed in escrow until the funds necessary are on hand and then they plan to go ahead. They have applied for a premit from the State which has not yet arrived. They figure on a 250 ton daily wet kelp plant. They have in mind the buying of the Swift plant (This is confidential and negotiations are not made yet). They have not yet secured a chemical engineer but are negotiating for one.

All the men are stable men in so far as I have known them and with one exception I have known them for years. They will not want to go ahead unless they can assure themselves that the opportunity is present to make a good going business concern out of the industry. There is no heavy capitalist in the group so they would be dependent on their stock sale for most of their capital, I think. Harry Adsit has the most money of any of them and he has the reputation of being well-to-do.

They represent as stable a group of local men as any group that could be gotten together and I know them to have been fair dealers and square men in their business deals about San Diego. I should say they would be as good a group to undertake the work as any group that I know of and that we can give them advise and support. Particularly at this time I think they can receive our advise and that they will act on it favorably. I should favor painting the picture as darkly as possible so as to make them investigate all the possibilities before they really tackle the propostion.

Do you know of any patent rights being held at the present time

which have a royalty hold upon the harvesting apparatus such as was used by Swift or as is being used by you? They are of the opinion that the re has been a patent issued recently which does cover this and as I recall it , the old patent was held by some company that formerly cut ell grass from some of the canals on the east coast.

La t Saturday morn ng I was at Santa Cruz island and found four spe imens of kelp t at we between the high and low water marks. Two of the s ecimens were rather mature plants and two of them were very young plants. Thes are the first specimens that I have found that were in this location except the ones that a e on the inside of the breakwater at San Pedro. i.e. the first found in natural condition on shore rocks in natures own place. Of course the number is small but it is interesting from the stnd point of distribution. It does not change the general staements made so far as a commercial distribution os concerned but does change my first scientific statement as to distribution.

I hope later on to b able to get you out on the Kemah for a trip about some of the islands when we can go over thebisland distribution.

Very truly yours

√CCF:BR

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

July fourteen,
1 9 2 0.

Mr. W. C. Crandall,
The Scripps Institution for
Biological Research,
LaJolla, Calif.

Dear Sir:

Your letter of July 6th has been received. We are interested in the points you brought up regarding the kelp plants at Santa Cruz Island, and wish to thank you for your report on the conditions of the beds.

Very truly yours,

Milton Whitney

Chief of Bureau.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

July 16, 1920.

Capt. W. C. Crandall,
Scripps Biological Institution,
La Jolla, California.

Dear Captain:

I have your good letter of the 6th instant, and ma very glad indeed to have your estimate anent the gentlemen organizing the new kelp concern at San Diego. I feel entirely satisfied with regard to them since receiving your letter, and from now on I shall do all I can to help them along. While convinced of their integrity and good intentions, I am not yet convinced of their qualifications for success on account of the fact that they don't seem to have had any experience as manufacturers. You remember that we have had quite a number of people in the kelp game whose intentions were the very best but whose lack of experience resulted in their failing to accomplish what they set out to do. The only salvation for the present group is to hire competent chemical engineering talent. There are plenty of quack chemists running loose who would guarantee anything they want done and who can be hired doubtless for a modest salary. But you have seen enough of that type to be able to predict the results. The logical thing for them to do is to take one of my men; and while I have kicked on that in the past, I am inclined to believe that it is the proper function for this plant not only to get results, but to train men; and since it will probably be several months or a year before they are ready to do business, I presume the proper thing is for me to offer them one of the men here. However, I shall want to have them handle the matter through me rather than go directly to the men here as I do not want my organization to get excited over the thoughts of leaving for more lucrative jobs. If it can be handled quietly and through me, I think I will be willing to supply a good man. If they went into the market for a man who could handle the job without previous trainingin a kelp plant, they would have to pay anywhere from five to ten thousand dollars a year in salary, and that would probably worry them no little.

Will you kindly do me a favor of supplying me with extracts from Brandt's report which will give his observations anent kelp disease? I have mentioned to you the fact that Professors Peirce and McMurphy of the Department of Biology of Leland Stanford University have undertaken the further study of this disease. They spent a day here going over the situation, collecting specimens, and making observations, and are now continuing the study at Pacific Grove. I

wish to supply them with all the information extant and for that reason would like to give them the benefit of Brandt's observations. With men of such standing as these, the question of priority need not give anyone any concern. If you think it a simpler way to handle it, I should be glad to copy the portions that I regard as germane if you will return the manuscript to me.

I note your further observations on the distribution of kelp. This is very interesting. I am looking forward to some opportunity in the future of accompanying you on the "Kima" on some one of your expeditions. I should certainly like to see the condition of the kelp beds in some of the other fields.

Thanking you in anticipation for your kindness, and with all good wishes, I am

Yours very sincerely,

J W Armstrong

In Charge.

JWT:ELB

July 23,192D.

J. W. Turrentine,
Kelp Experiment Station,
Summerland, California.

My dear Dr. Turrentine:

Under separate cover I am sending you the notes of Dr. Brandt which were taken while he was working for the Station. In this I am sending the laboratory notes taken, and I trust that the gentlemen to whom these are given will return them, as there are some things which I wish to work over on various phases of the problem myself.

The manuscript for the Brandt paper has been referred to the Editorial Committee at the University of California, and Professors Pierce and McMurphy will be able to read the same if they care to go up to the office of the University Press at the University.

Trusting this may be what you desire, I am

Yours very sincerely,

WCC/G

Collaborator.

October 21, 1920.

Bureau of Soils,
Washington, D. C.

Dear Sirs:

This is to advise you that onOctober 13 I observed the following kelp beds:

San Diego	No. 2.	Medium
Point Loma	No. 3.	Heavy
La Jolla	No. 4.	Medium
Encinitas	No. 6.	Medium
Del Mar	No. 5.	Medium
Oceanside	No. 7.	Medium
Mateo	No. 8.	Medium
San Juan	No. 9.	Heavy
Laguna	No. 10.	Medium
SanPedro	No. 11-12	Medium
White's Point	No. 13	Medium
Redondo	No. 14	Medium.

There had been a heavy southwest blow on the 12 and all of the beds showed the effects of the whipping they had received. This morning I find at the beach above La Jolla, large masses of kelp that had drifted ashore during the night, and which indicate the effect of the strong wind on Tuesday.

Very truly yours,

WCC/C

Collaborator.

October 21, 1920.

Bureau of Soils,
Washington, D. C.

Dear Sirs:

This is to advise you that on October 13 I observed the following kelp beds:

San Diego	No. 2.	Medium
Point Loma	No. 3.	Heavy
La Jolla	No. 4.	Medium
Bonnitas	No. 6.	Medium
Del Mar	No. 5.	Medium
Oceanside	No. 7.	Medium
Mates	No. 8.	Medium
San Juan	No. 9.	Heavy
Laguna	No. 10.	Medium
San Pedro	No. 11-12	Medium
White Point	No. 13	Medium
Redondo	No. 14	Medium.

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Very truly yours,

wcc/c

Collaborator.

October 21, 1920.

Mr. J. W. Turrentine,
Bureau of Soils,
Washington, D. C.

My dear Mr. Turrentine:

Yesterday I checked up the kelp beds from Point Vincent to San Diego and found them in medium heft. It so happened that we had quite a blow the night before and the beds showed somewhat the effects of the whipping they had received. However, considering that this is the month of October, the beds are really looking in good shape, and if our kelp companies decide to start operation, they will find ample supply for all they need close at hand.

I am sending today a couple more of the National Kelp Products Company folders which you may desire for your file in Washington. Also I am sending two of them to your Summerland address.

Today I received back from the Editorial Committee of the University, Brandt's paper on the kelp. According to the recommendations of Setchell, the Editorial Committee refuses to print the paper on the grounds that it was not complete enough in some details. Of course, on account of the death of Brandt it will be impossible to make that particular paper any more inclusive than it is at the present time, and when you return to the west I wish that you would let me know, and let us see if we can not figure out some way whereby Brandt, who has done so much good work should receive the benefit of that work by the printing of his paper in permanent form. Then it will be possible for someone else to take the work and complete the portions that may seem incomplete at the present time and so round out the entire subject. I expect to go to Berkeley in November and I will see Mr. Setchell and Mr. Gardner, and if you will advise me again of the names of the Stanford men who are taking up the "black rot", I will also try and see them, and see what we can evolve out of the proposition.

I trust that everything is swinging along in good shape in Washington, and that when you return you will let me know.

Very sincerely yours,

WCC/G

October 21, 1920.

Mr. J. W. Turrentine,
Bureau of Soils,
Washington, D. C.

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I trust that everything is swinging along in good shape in Washington, and that when you return you will let me know.

Very sincerely yours,

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UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

November 18, 1920.

Capt. W. C. Crandall,
Scripps Biological Institute,
La Jolla, California.

Dear Crandall:

I have your esteemed favor of the 21st ultimo, and am very much grieved, indeed, to hear that Brandt's manuscript was returned. As I remember my interview at Berkeley with Setchell, Lipman, and others, there were several possible avenues through which this manuscript could reach the press. I believe we have not exhausted the possibilities by any means, and I assure you I am ready to do all that I can to assist in having it published. It has got to be published somewhere. The material is too valuable to permit to remain in manuscript form. I am sure there will be some way to get it before the public.

The gentlemen at Stanford whose names you inquire, are Professors George J. Peirce and James McMurphy. Professor Peirce is in the east on Sabbatical leave, but Professor McMurphy, I presume, is still at Stanford.

I had an interesting trip in the east, and was able to stir up no little advertising for the kelp proposition. I am entirely confident that something is going to come of it, and that we shall see some large-scale undertakings along the line of kelp products. You had better stop off on your way up and talk over matters with me.

With kindest personal regards to yourself and Mrs. Crandall, I am

Yours very sincerely,

J W Turrentine
In Charge.

JWTurrentine
ELB

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUNNYLAND, CALIFORNIA.

November 18, 1920.

Dept. W. C. Crandall,
Scripps Biological Institute,
La Jolla, California.

Dear Crandall:

I have your esteemed favor of the 21st ultimo, and am very much grieved, indeed, to hear that Brandt's manuscript was returned. As I remember my interview at Berkeley with Setchell, Lipman, and others, there were several possible avenues through which this manuscript could reach the press. I believe we have not exhausted the possibilities by any means, and I assure you I am ready to do all that I can to assist in having it published. It has got to be published somewhere. The material is too valuable to permit to remain in manuscript form. I am sure there will be some way to get it before the public.

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With kindest personal regards to yourself and Mrs. Crandall, I am

Yours very sincerely,

In Charge.

W.Turrentine
ELB

November 29, 1920

Dr. J. W. Turrentine,
Summerland, California.
Department of Experimental Research.

My Dear Dr. Turrentine:

I regret very much that I was unable to see you last Saturday when I stopped at Summerland. I went to see Professor McMurphy at Stanford, and so far as I could discover, he had done very little work on the black rot and has not found out anything more than we have already discovered in the past years, namely, that there is a slump off along the latter part of August and during the month of September. The unfortunate situation is that Professor McMurphy does not seem to be caring very much about the subject as he is more interested in plant pathology of a different type and so does not consider work on the black rot as coming strictly within his field. Of course Professor Peirce is on this symbasical and I was unable to get in touch with the work that he had done. At Berkeley I interviewed Professor Setchell and so far as I could find out Professor Setchell was against the publication of Brandt's paper for the reason that there were some steps which were incomplete and that he was desirous of having all steps completed before he would put an O.K. upon it for the Editorial Committee. Of course, Brandt being dead, that is an impossible situation so far as Brandt is concerned, and there is no apparent desire on the part of the Botany Department at Berkeley to work on this problem just at this time. It so happens that Setchell is more interested in getting married and then studying the corals of the South Seas. The only man that we have left to work upon is Gardner and although I went tupeeror four times to places that he was supposed to be, I was unable to get in touch with him, but he is making at this time a list and study of the taxonomy of all the sea weeds found on the west coast. Under this head of course, there is a possibility that finally he will come to macrocystis but even at that he may not go into the life history but assume that this life history is comparable to the life history of other algae which have been studied. I do not feel very optimistic about the situation at Berkeley as we have now been turned down by the Botany Department, the Scripps Institution, and indirectly, of course, by the Editorial Committee, so that it may be necessary to look in some other direction for assistance. I personally do not agree with the attitude taken by either Dr. Setchell or Dr. Ritter, for although I will admit that the work is incomplete, still it is the work of a man who has done some

of the steps well and those steps should be recorded. In my estimation the steps already done are more worthy of being recorded than some of the problems that are constantly being foisted upon the general scientific world by some of our more noted researchers, but a good reputation, of course, is one of the big things when it comes to getting a piece of work of this kind passed through an Editorial Committee. However, I do find that the Editorial Committee is turning down a vast number of papers so possibly I may be misinterpreting their actions somewhat, but I rather think that it is all off so far as that method is concerned at the present time.

I am very much interested in hearing concerning the trip that you had east, and shall be very much pleased to see some large scale undertakings on kelp products under way. I had the pleasure of wandering around the plant for a few hours on Saturday and enjoyed the apparent progress that has been made. There are a number of points that I should like to hear you discuss in detail, which of course I was only able to see in the general run that I made through the plant. I think that it would be well for you to advise me when you are going to be in Los Angeles at some near future date and that I should meet you there and we could thrash out this situation a little more thoroughly.

Very sincerely yours,

Collaborator.

CC/C

December 24, 1920.

Chief Bureau of Soils,
Washington, D. C.

Dear Sir:

This is to advise you that the Monolith Company, concerning which you wrote me several months ago, and which I investigated at the time, has closed down for an indefinite period. At no time have they done anything with the potash recovery, but the entire operation of the plant and the company was for the manufacture of cement, and this cement was sold to the city of San Diego. From advices received, I doubt very much whether they expect to continue with their process.

The Kelp Company, which is being formed in San Diego, is now chartering a harvester and anticipate proceeding with the work as outlined by the plans at Summerland.

Very sincerely yours,

WCC/G

Collaborator.

December 24, 1920.

Chief Bureau of Soils,
Washington, D. C.

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Very sincerely yours,

WCC/G

Collaborator.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

December 31, 1920.

Capt. W. C. Crandall,
Scripps Biological Institute,
Washington, D. C.

Dear Crandall:

I have just gotten a wire from Professor Whitney ordering me to Washington in connection with the Hearings. It is evident from the wire that our appropriation is under attack, and with the cutting and slashing that is going on in Washington in every direction, there is no telling what will be done to our appropriation. I imagine the situation calls for some action, and if you have any in reserve, I wish you would use it. You might let Mr. Knoll in on the situation so that he and associates can use what political pull they have to help out. Of course, it is to their advantage to have the work here carried on if they are going into the kelp-potash game. I will see you soon after my return and let you have the dope.

With kindest personal regards to you and Mrs. Crandall, I am

Yours very sincerely,

J.W. Turrentine

In Charge.

JWTurrentine

ELB